?t12/7/5

1

12/7/5   (Item 4 from file: 275)
DIALOG(R)File 275:Gale Group Computer DB(TM)
(c) 2001 The Gale Group. All rts. reserv.

01259592   SUPPLIER NUMBER: 07184689   (THIS IS THE FULL TEXT)
Databases boost fundamental analysis. (automation in the investment industry)
Byramji, Homi
Wall Street Computer Review, v6, n2, p46(8)
Nov, 1988

TEXT:

Databases Boost Fundamental Analysis

Investment managers in the late 1980s face an investment world radically different from that of even a few years ago. Faced with turbulent securities markets, a shifty economy and intense pressure to squeeze the most performance out of every investment, money managers have reversed their early suspicion of computers and now recognize the value of their speed and efficiency. (See cover story.)

Fundamental analysis is among the chief beneficiaries of computerization. The huge amounts of data and complex calculations required to evaluate the economic and financial strengths of companies and industries are an ideal match for computers' number-crunching capabilities, especially now that smaller, cheaper machines pack mainframe power.

"I remember when it used to take three to four days to conceptualize a screen, program it, and test it, and finally correctly generate the output," says Steve Brodsky, vice president of research at Oppenheimer and Co., New York. "Now screening only takes minutes, and I can do many screens at no extra cost on the Lotus CD/Investment system in our department."

Fundamental analysis systems provide users convenient and rapid access to current and historical information on a large number of companies, and the tools with which to manipulate and **report** this data. Most fundamental analysis systems let users:

* Generate detailed historical financial statements,

* Generate analytical reports such as ratio reports and common-sized reports. Ratio reports look at various standard or user-defined ratios, such as inventory to sales or the so-called quick ratio of cash, marketable securities and accounts receivables vs. current liabilities, all of which together indicate a company's financial strength and quality of management. Common-sized reports are reports where all income statement items are defined as a percentage of sales and all balance sheet items are expressed as a percentage of assets, making it easier to compare different companies. The user can obtain these reports for one company over multiple historical periods, or for several companies for the same period. The latter is useful when comparing companies or performing an industry analysis.

* Download data to Lotus 1-2-3 or other software. Downloaded data can be included in proprietary models, combined with other data into multi-**factor** **models** , included in time-series or statistical analysis, saved for historical analysis, reported in enhanced formats, and displayed graphically or plotted.

* Screening for companies that meet the user's criteria. This is often used to locate investment opportunities, especially to identify companies most likely to benefit from or suffer adverse impact from an anticipated economic event. For example, if the user expects the dollar to fall, he may want to search for companies with significant earnings from foreign subsidiaries, and for export-oriented companies.

* Calculate new data items such as ratios, growth rates, and

multifactor models derived from the information provided by the data vendors. Furthermore, some systems also let the user back-test investment strategies.

Even though computerized research services can eliminate much of the drudgery from analytic tasks, the investment process is far from an automatic one.

Human experience and expertise are still the critical **factor** in generating excess returns. "The construction of the portfolio processes that implement fundamental models is as important as the construction of sound fundamental models themselves," says David Cameron, investment council at Standish, Ayer and Wood Inc. in Boston.

"Execution costs, execution prices, rebalancing frequency and timing, and portfolio diversification and risk constraints must be all carefully considered when evaluating the effectiveness of the fundamental model," he adds.

There is fierce competition among the many providers of fundamental analysis systems. One vendor, Shearson Lehman Hutton, has already discontinued its FINSTAT product and dropped from the race. The rest compete on ease-of-use, functionality and support services. Furthermore, in the current cautious post-crash environment several vendors have reduced their prices in order to attract new business.

The large database requirements of fundamental analysis systems are the main criteria for choosing the appropriate delivery vehicle. Personal computer users can get databases and software on floppy disks, tape cartridges or CD-ROM (Compact Disk-Read Only Memory) disks, or can dial up time-sharing services. Larger firms with in-house mini- or mainframe computers can purchase software to install on their systems. The advantages and disadvantages of each approach are described in the attached table.

Competition among software vendors is intense; they introduce frequent new features, and if one vendor introduces a new feature and it is well-received by users, the concept is immediately copied, and even improved upon, by the other vendors. Despite this, the products are not equivalent. Questions to ask when evaluating products include:

* Which databases are available? These databases commonly include: The Compustat Industrial, Aggregate and Business Information tapes; Value Line; Ford Investor Services; Market Guide; I/B/E/S Earnings Estimates; Zack's Earnings Estimates; and daily pricing databases.

* Can information from multiple databases be easily included in the same screening criterion or **report** ? (Some systems require that the user leave one database before accessing another.)

* How timely are the database updates? How quickly does the database vendor update their databases from the 10-K and 10-Q releases, and what delays do the software vendors introduce in processing, duplicating and distributing of this data?

* How frequently are updates provided? Can users download closing prices between updates, and will these closing prices be used to recalculate price-dependent ratios?

* Can users calculate new data items from those reported? What functions and other mathematical capabilities are available? Can these definitions be saved for repeated use? How are calculated item values updated with each new database update?

* Data downloading flexibility. Data is typically downloaded in one of three ways. First, data can be placed in row and column orientation in the top left corner of the spreadsheet, and the user can build his analysis in another part of the worksheet and reference this data. Another way is to reference specific items in individual cell locations within the analysis, and have it be directly filled with the required data. Third, users can download standard analytic or financial statement reports to the spreadsheet for further manipulation or analysis. In some cases users can

download these reports as a combination of item values and formulas so that users can change values and evaluate their impact or project the reports out and forecast future periods.
. * The availability of preformatted reports; not just financial statements, but analytic reports as well. Can users modify these reports to reflect their own analytic methodologies? Can they create new ones?
* Each of use, as measured by: Clear and unambiguous on-screen instructions; precise error messages with instructions for corrective actions; and easy look-ups of item identifiers, ticker symbols, filenames, or any other values.
Here is a look at some of the leading fundamental analysis systems, grouped by their data delivery method.
FactSet
FactSet Data Systems Inc. regard themselves as a service-oriented information utility. For a mixed annual fee, users have unlimited dial-up access to FactSet's mainframe computers.
FactSet's databases include the Compustat Industrial, Utility, Telecommunications, Bank, Business segment; Geographic and Research databases; as well as those from Value Line, Market Guide, Ford Investor Services, I/B/E/S, Zack's, daily prices; and the Invest/Net insider trading databases. The Compustat and Value Line fundamental databases, the pricing database, and the earnings estimate databases are fully integrated. Users can combine in the same formula or **report** any information from any of these databases, if they have a current subscription, by just referencing the item without any consideration of the source database for each item. However, geographical segment and business segment information cannot be downloaded into a spreadsheet.
Like most of its competitors, FactSet's comprehensive software offering includes screening, data downloading, preformatted analytic reports and graphics capabilities. The screening software is adequate, but a little harder to use than most of its competitors', and screening is limited to a large but predefined set of items. If a user wants to calculate a new item not on this list, FactSet will promptly set it up.
FactSet has just released new and greatly enhanced screening software, for which there is an additional fixed annual charge. The new software is much easier to use and lets users calculate new data items referencing any data from any database. Powerful built-in functions expand the types of calculations users can perform.
FactSet's data downloading may be one of the most flexible, because users can create a Lotus 1-2-3 model and request the specific information in each cell. This ability to place the data request within the analysis eases model development.
However, users must create the model in Lotus 1-2-3, then dial FactSet and download the data, and finally return to Lotus 1-2-3 again. FactSet is well regarded for its highly professional technical support. If a user has a question about any aspect of system use, assistance is prompt and knowledgeable. FactSet will, if necessary, even develop templates for clients at no charge, though most clients find it expedient to develop their own.
DataSheet
DataSheet, from Interactive Data Corp. (IDC), allows users to download Compustat, I/B/E/S, Value Line and Exstat data into spreadsheets. Users dial into the IDC computers and build the worksheet request on-line. Each item requested in uniquely defined by the ticker, item code and the date. The first two columns and first two rows of the spreadsheet are reserved for these descriptions, with two rows and one column or one row and two columns in use at any time. As soon as all three descriptors are specified, the data is immediately retrieved. This lets the user view the data retrieved and, if necessary, request new or different information.

DataSheet's main search feature lets users enter partial names and will display all matching company names and tickers (or item names and codes). Furthermore, the product instantly displays full item definitions, including how each item is calculated, its update frequency, and its reporting frequency. DataSheet, and its companion screening program, PC Screen, are sold separately on either a usage-based or fixed-fee schedule.

Stockfacts

Stockfacts, from Salomon Brothers Inc., provides integrated access to the Compustat, Value Line, Zacks, I/B/E/S and pricing databases. Stockfacts users can generate a variety of preformatted reports and download these into Lotus 1-2-3 spreadsheets. These spreadsheets are accompanied by macros that can replace computed values by the approximate formulas, so that users can change certain values and evaluate their impact.

In addition to other common applications, such as screening, **report** generation and user-specified data downloading, Stockfacts offers some unique value-added analyses, such as an earnings discount model called the E-MODEL, designed by Eric Sorensen, director of quantitative analysis at Salomon Brothers, and a taxable asset allocation model.

CD/Investment

As its name implies, CD/Investment from Lotus Information Services Co., Cambridge, Mass., is a CD-ROM-based research tool. On one CD-ROM, CD/Investment provides the Compustat, I/B/E/S, Ford, Media General, Value Line, daily stock price and bond price databases. CD/Investment can download daily prices electronically and automatically recalculate price-dependent ratios. Updated CD-ROMs are mailed out weekly.

The software consists of the MicroScan screening and reporting software and a Lotus 1-2-3-based interface, called Lotus Financial, that permits the user to capture the above data directly into spreadsheets. CD/Investment's downloading software includes a library of canned reports that can be used as is or modified by the user if they desire. Users can also create their own analysis if they are expert 1-2-3 users and are familiar with macros.

Lotus's consulting division is available to create custom applications for an additional fee. In addition to CD/Investment, Lotus also provides CD/International. CD/International is based on the WorldScope database that was jointly produced by Wright Investors' Service, and the Center for International Financial Analysis and Research (CIFAR). This software is different from the CD/Investment software. It is menu-driven, with on-screen instructions making it quite simple to use.

Compustat PC Plus

Compustat PC Plus, is also distributed weekly on CD-ROM. It contains the Compustat Industrial and Business Segment databases, the Compustat research database, and the I/B/E/S Earnings estimates. Daily price downloads are also available.

PC Plus has an extensive set of computational functions which users can use to define new items. This calculation capability is available throughout PC Plus's screening, reporting and data downloading functions.

PC Plus supports two types of **report** structures. The first, columnar reports, are the typical screening type reports containing data items in columns. The second, formatting reports, are better suited to financial statement-type reports. Users are presented with a blank screen on which they can scroll to a desired location at which they can enter text, or request any information and display formatting. It is extremely flexible and easy to use. Compustat gives users a library of about 50 formatted reports developed using this facility. Users can modify these standard reports.

All reports can be downloaded to Lotus 1-2-3, and users working within 1-2-3 can request specific data items without leaving the Lotus 1-2-3 program.

Compustat is currently developing backtesting software due for release in the first quarter of 1989.

EASY

EASY is a service using Write Once Read Many (WORM) optical disk technology, from Zack's Investment Research. The disk contains Value Line, Media General, Zack's estimate and daily pricing databases. Users can obtain Compustat data formatted for use with Zack's software, but must get subsequent updates electronically from Data Resources Inc. (DRI), New York.

In addition to the usual screening, reporting, and data-downloading capabilities, EASY's backtesting software lets users test the effectiveness of fundamental strategies in two ways. The holding period returns analysis groups stocks in fractiles (such as deciles or quintiles) based on the fundamental indicator being tested, and calculates the equal weighted average total return for each fractile. In the Portfolio Simulation mode, users define a buy rule and a sell rule. The system executes these transactions, nets out commission and trading costs, and compares the resulting performance to the returns of a chosen index.

Market Screen

Market Screen from Market Guide Inc., provides access to the firm's timely database on 4,500 over-the-counter companies. The database includes descriptive textual and numeric information, and unlike other vendors who pigeon-hole information into a predefined set of items, Market Guide's database displays the information "as reported."

Market Guide distributes weekly database updates on floppy disks which users copy onto the hard disk. An update program replaces the old information with the new. By the end of 1988, Market Guide will expand to provide information on the New York and American exchange companies, and at that time the service will also be available on CD-ROM.

Market Guide's main output is a five-page **report** showing the key financial characteristics, textual information on the company's lines of business, earnings performance and capital structure, a four-year income statement, and a two-year balance sheet. The numeric information can be screened on, reported, or downloaded to Lotus.

DART

DART from Real Decisions Corp. offers an in-house solution to Compustat, Value Line, WorldScope, I/B/E/S and daily pricing access. The daily pricing component of the system is provided by IDD Information Services Inc.'s Tradeline securities database system. Tradeline and DART are fully integrated. The operations staff at the user location is responsible for updating the databases directly from the tapes sent by the data vendors. DART is available on DEC VAX or the IBM mainframes running the VM/CMS operating system.

The command-driven software allows users to screen, generate financial statements and download data into Lotus 1-2-3. A menu driven user-interface called EZ*DART simplifies its use by prompting for information, and enabling the look-up item codes.

Finally, the DART databases can also be accessed by programmers through Fortran subroutines.

P.R.O.S.E.

P.R.O.S.E., from R.V. Whitehall, runs on Digital Equipment Crop. and Prime minicomputers. P.R.O.S.E. is best suited for organizations that need to combine data from many different sources, including proprietary and industry specific databases.

In addition to the usual screening, reporting and downloading features, P.R.O.S.E. offers users several portfolio analysis reports.

P.R.O.S.E. is also an open system, that is, the system can be extended by having custom programs written in Fortran.

Market Plus

Market Plus from International Data Corp. is the newest entrant in

the in-house mini/mainframe investment software industry. Market Plus differs from P.R.O.S.E. and DART in a very fundamental and important manner: it includes an update and maintenance service. Users do not need in-house personnel to load and maintain the databases; IDC collects market feeds from all over the world, and updates their own databases with it. They also load the tapes from Compustat and other database vendors.

The vendor puts this data into a Market Plus-compatible format, then transmits it to the user's computers over high-speed dedicated lines. An update program then posts these changes to the user's databases. Furthermore, as IDC identifies and corrects data errors on their own computers, they make the same revisions to client databases.

Market Plus' analytic software is called 3 View. It simulates a spreadsheet environment into which three dimensional (company X item X date) information is retrieved, and displayed in a variety of formats. The user can easily change the row, column and page orientation of this data. 3 View also has powerful screening and reporting capabilities patterned after IDC's PC Screen product.

Fame and Research-Pak

Fame, from Fame Software Corp., a Citicorp company, is a time series oriented database management system and an English-like language for analysis, reporting, graphics, and statistics.

Research Pak is an extensin of Fame that has an auxiliary data structure to support screening and sorting across multiple databases, including the client's proprietary data. All Fame analytics, graphics and reporting capabilities are also available in Research Pak.

Research Pak and Fame are installed on user's in-house computers and can operate on a range of products from Sun workstations to networks to mainframe computers. Fame's English-like language may take users longer to master than a menu-driven interface, but has the advantage of providing immediate access to any Research Pak capability.

There are two other fundamental analysis packages that are novel in approach and supplement the capabilities of the above services. They are XYZ and Research Station.

XYZ

XYZ is an aritifical intelligence system developed by General Intelligence Corp. The software reads four periods worth of financial information from Lotus (.PRN) files; and downloaded FactSet, PC Plus, CD/Investment, Stockfacts or DataSheet data. XYZ then performs a detailed analysis of this data, much like a thorough and organized financial analyst would do, if he had the time. XYZ not only evaluates simple ratios, but it also:

* compares companies to their industry composites or selected index;
* assesses the impact of industry-wide economic factors, as reported by the Bureau of Economic Research, on a company's performance;
* establishes causal relationships for changes in performance;
* discerns trends and turning points that are helpful in estimating a company's future performance;
* explains or flags areas of concern that may not be readily apparent.

For example, it may trace improved earnings to reduced costs of goods sold as a percentage of sales, which in turn may be caused by a build-up of finished goods inventory that defers fixed costs to future periods where they will have a negative impact on earnings.

The XYZ analysis resembles a tree shaped hierarchy. The analysis is divided into sections on quality of earnings, income statement, balance sheet, quality of assets, financial strength, and cash-flow stability including trade cycle sources and drains of funds.

Research Station

Research Station from Atlantic Systems Inc. downloads data from one

of the other fundamental analysis systems and converts it into a Javelin
format. Javelin, from Javelin Software Corp., Cambridge, Mass., is a
software package that combines database management, spreadsheet, and
graphics features. It understands dates and allows the creation of
three-dimensional data structures to match the orientation of the
underlying information.

Screening Software

Some products allow users to screen and **report** on fundamental data,
but cannot generate multi-year or multi-company financial statements. The
systems can download screening reports to spreadsheets, but cannot
generally perform the more flexible formatted downloads. Some
representative stock screening packages are:

Value Master

Value Master from Value Line Inc., provides access to the Value Line
database containing about 100 items on 1,600 companies. These items include
value Line's proprietary ratings for timeliness, safety and financial
strength, earnings estimates and projected growth rates.

Merrill Screen

Merrill Screen, from Merrill Lynch, provides screening and reporting
access to Merrill Lynch's proprietary database of 100 plus items on 1,400
U.S. companies. The data includes the Merrill Lynch analysts earnings
estimates, valuations, investment rating and projections of financial
performance.

The Fundamental Investor

The Fundamental Investor from Savant Corp. provides possibly the
lowest cost means of screening on fundamental data. Data is available from
a variety of sources such as: by diskette, updated monthly or quarterly,
from. Disclosure II, Standard & Poor's StockPak II, and BusinessWeek's
MUTUAL FUND SCOREBOARD (quarterly updates); downloaded via modem from:
Warner Computer Systems (Disclosure II data), Ford Investor Services.

The Fundamental Investor is part of the Savant Investor Series which,
along with the Technical Investor, The Investor Portfolio, and Utility (The
Technical Data Bridge, and the Fundamental Data bridge--available for an
additional $145 each) allows the user to integrate the results of the
fundamental screening with technical analysis and transfer data back and
forth between the Savant Series and Lotus 1-2-3.
CAPTIONS: Fundamental analysis databases. (table); Fundamental analysis
distribution methodologies. (table)

COPYRIGHT 1988 Dealers' Digest Inc.